

Debuncher Band 4-Upper Momentum Band Pass Filter Modification

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Abstract *The previous design of the Debuncher Band 4-upper momentum bandpass filter was slightly too broad band. A new design was built and implemented. The design criteria is presented and follows the format presented previously.*

In the RFI note #004, data was presented for the Debuncher stochastic cooling band pass filters. The data for the bandpass filter for Band 4-upper resulted in a filter that was slightly too broad band, which resulted in performance that allowed data from Band 4-lower to mix with the data from Band 4-upper. This required that Band 4-upper's frequency definition be slightly modified such that Band 4-upper momentum is now 7.800 GHz - 8.3 GHz. Being consistent with the data presented in Table 1 in RFI technote #004, (<http://www-rfi.fnal.gov/technotes/TN/TN004.pdf>), the new Band 4-upper momentum design data is as follows:

W_1	S_1	L_1	W_2	S_2	L_2	W_3	S_3	L_3	W_4	S_4	L_4
42.1	20.4	204	56.8	30.9	239	64.5	26.1	198	43	13.4	241

The overall group delay through this new filter is still 1 nsec and has similar performance as the other filters.